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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/044,476

01/10/2002

Ray A. Walker

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01/09/2004

HEWLETT-PACKARD COMPANY

Intellectual Property Administration

P.O. Box 272400

Fort Collins, CO 80527-2400

EXAMINER

LIANG, LEONARD S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,476

Applicant(s)

WALKER, RAY A.

Examiner

Leonard S Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 103***

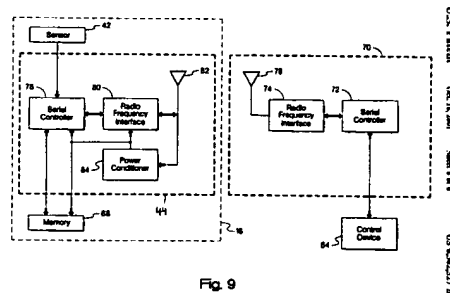
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (US Pat 6302527) in view of Hay (US Pat 6239879).

Walker discloses:

- {claim 1} An ink level sensing system (figure 9, reference 42; column 2, lines 20-29)



comprising an ink reservoir having an interior space for containing ink (figure 2, reference 24); having a radio frequency interface disposed on top of the ink reservoir (figure 9, reference 80; column 6, lines 47-55);

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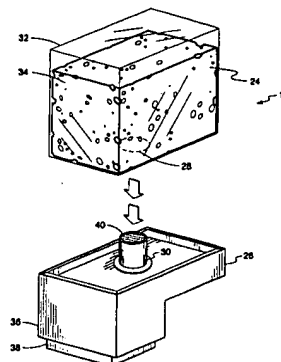


Fig. 2

a printing device configured for receiving the ink reservoir (figure 2, reference 38), the printing device including a radio frequency interface for receiving ink level information that is coupled through the ink reservoir by the radio frequency interface on top of the ink reservoir (figure 9, references 74, 80; column 6, lines 47-65; column 7; column 8, lines 1-39).

- {claim 2} sensor electrically connected to the radio frequency interface (figure 9, references 42, 80; column 7, lines 32-38), the sensor providing a sensor output signal indicative of ink level within the ink reservoir to the radio frequency interface (column 7, lines 32-38).
- {claim 3} ink reservoir includes a sidewall (figure 2, reference 32; housing inherently contains sidewall) and wherein the radio frequency interface includes an antenna for coupling a radio frequency signal through the sidewall to the printing system (figure 9, reference 82; column 7, lines 20-26).
- {claim 4} radio frequency interface within the ink reservoir is enclosed in an encapsulant material (figure 5, reference 46)

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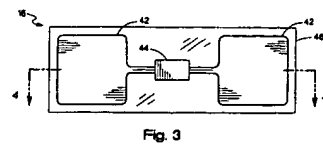


Fig. 3

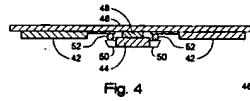


Fig. 4

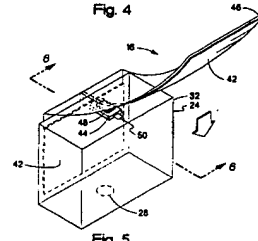


Fig. 5

- {claim 5} sensor is a pair of electrodes (column 4, lines 39-43) to measure electrical continuity through ink within the ink reservoir (figure 7, reference 42; column 5, lines 30-49)

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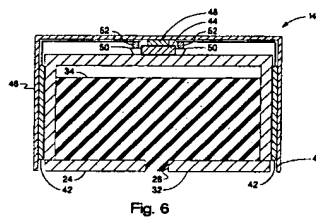


Fig. 6

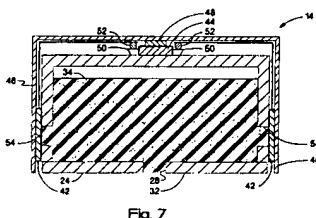
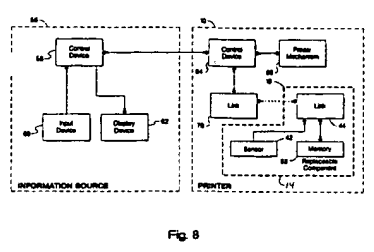


Fig. 7

- {claim 6} sensor is a pair of electrodes to measure electrical capacitance between the pair of electrodes (figure 6, reference 42; column 5, lines 8-20)
- {claim 7} A replaceable printing component (column 1, lines 62-64) comprising: a reservoir for containing printing material (figure 2, reference 24); wireless linking device (figure 8, reference 14, 44)



for emitting a signal indicative of printing material within the reservoir (figure 9, reference 44; column 6, lines 47-67; column 7, column 8, lines 1-39) wherein the reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system (figure 5, reference 32; column 4, lines 33-43).

- {claim 8} wireless linking device is a radio frequency linking device for providing a radio frequency signal (figure 9, reference 80; column 6, lines 47-55).
- {claim 9} replaceable printing component is a replaceable ink reservoir (figure 2, reference 14) and wherein the wireless linking device includes a sensor (figure 9, reference 42) that provides an output signal indicative of ink within the ink reservoir (column 7, lines 30-38) and wherein the output signal is coupled to the printing system by the wireless linking device (column 4, lines 33-43).
- {claim 10} the wireless linking device includes a sensor having a pair of electrodes disposed within the ink reservoir to measure electrical continuity through ink within the ink reservoir (as taught in claim 5 above).
- {claim 11} the wireless linking device includes a sensor having a pair of electrodes that are disposed within the ink reservoir to measure capacitance between the pair of electrodes (as taught in claim 6 above).
- {claim 12} reservoir does not contain electrical conductors that extend from within the reservoir to a location outside the reservoir (figure 5-7).
- {claim 13} A printer system having a printer portion and at least one replaceable receiver (figure 2, references 14, 24, 26) comprising: a first wireless link associated with the replaceable reservoir (figure 9, reference 44), the first wireless link disposed entirely within the replaceable reservoir (figure 8, reference 14, 44); a second wireless link associated with the printer portion (figure 9, reference 70), the second wireless link receiving replaceable reservoir information from the first wireless link by transmission of information in a wireless manner (column 6, lines 17-21).

- {claim 14} first wireless link is a radio frequency transmitter for transmitting a radio frequency signal (figure 9, reference 80) and the second wireless link is a radio frequency receiver for receiving the radio frequency signal and determining the replaceable reservoir information based thereon (figure 9, reference 74); column 6, lines 47-67; column 7, column 8, lines 1-39).
- {claim 15} replaceable reservoir is a replaceable ink reservoir and wherein the replaceable reservoir information is ink level information for the replaceable ink reservoir (column 1, lines 20-24).
- {claim 16} first wireless link includes a pair of electrodes disposed on the replaceable reservoir to measure electrical continuity of ink within the replaceable reservoir (as taught in claim 5)
- {claim 17} first wireless link includes a pair of electrodes disposed on the replaceable print material reservoir to measure capacitance between the pair of electrodes (as taught in claim 6)
- {claim 18} the printer portion is an ink jet printer and wherein the replaceable print material reservoir contains ink (column 1, lines 20-24)
- {claim 19} A method for transferring status information from a an ink reservoir to a printer portion (column 1, lines 20-24); determining status information (as taught in claim 2); transferring status information (as taught in claim 3)
- {claim 20} the printer portion is an ink jet printer and wherein the status information is ink level information in the ink reservoir (column 1, lines 20-24)
- {claim 21} the transferring status information is accomplished by providing a radio frequency signal that couples through a sidewall of the ink reservoir (as taught in claim 3).

Walker differs from the claimed invention in that it does not disclose that the radio frequency interface and level sensor are disposed within the interior space of the ink reservoir and at least partially surrounded by ink.

Hay discloses, "Contactless power and communications links are established between the replaceable component and the printer engine for peripheral devices installed on or within the replaceable component. Such peripheral devices may include...a toner quantity sensor..." (column 2, lines 27-34). In light of this teaching, it is clear that Hay is suggesting that it is an equivalent combination to put a contactless communication link (i.e. radio frequency interface/sensor) either on or within the

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replaceable component (i.e. interior space of ink reservoir) because the same function is performed regardless of the configuration.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Hay into the invention of Walker so that the radio frequency interface and sensor disclosed by Walker may be incorporated within the interior space of the ink reservoir. The motivation for the skilled artisan in doing so is to gain the benefit of providing a contactless connection system for providing power and communications coupling to a peripheral device in a replaceable printer component (column 2, lines 20-22). As shown above, in light of the teachings of Hay, it is equivalent to replace the "on the reservoir" configuration of Walker with a "within the reservoir" configuration. This combination naturally suggests all claimed limitations of the dependent claims.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl LSL



Stephen D. Meier
Primary Examiner